

# WILDFIRE SUPPORT



NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION • UNITED STATES DEPARTMENT OF COMMERCE

**N**OAA experts play a vital role in efforts to combat wildfires that rage across the United States each year, threatening lives, structures and tens of thousands of acres of vegetation. Since 1914, NOAA's National Weather Service meteorologists have worked closely with fire behavior experts from the U.S. Department of Agriculture's Forest Service, the Department of Interior's Bureau of Land Management, and other federal, state and local fire control agencies that are responsible for suppressing fires.

Weather and vegetation type and condition are key ingredients in fire behavior, so once a fire starts, up-to-date weather information becomes especially critical. Accurate forecasts of wind direction and speed strongly influence fire strategy and help incident commanders make the best possible decisions to manage wildfires.

From long-range fire weather outlooks to on-site forecasts, specially trained meteorologists provide services that contribute to the safety of all personnel involved in the management of fires.

National Weather Service forecasters provide outlooks of critical fire weather conditions across the nation up to eight days in advance. Critical fire weather conditions include dry thunderstorms, hot temperatures, low humidity and high winds combined with dry vegetation. These outlooks provide a national picture of critical fire weather patterns that helps fire officials plan ahead and manage firefighting resources.



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NOAA's National Weather Service forecast offices across the country issue a variety of products on the local scale to support fire agency planning and suppression efforts. These include routine fire weather planning forecasts, point and area forecasts, watches and warnings for critical fire weather events, and site-specific spot forecasts for wildland fires. Digital fire weather planning data are also provided to agencies via the Internet and other methods.

Fire weather phenomenon of critical interest to fire agencies include cold fronts, dry thunderstorms, erratic winds, and very dry and hot environments. Offices near active fires often provide Internet-based weather briefings to operational fire management teams. These briefings help fire managers plan where to place crews and how to best manage the fire. Forecasters draw upon various sources of meteorological information such as computer produced weather models, local weather observations, satellite weather information and more.

The local weather service office also provides specific meteorological support to NOAA's incident meteorologists, also known as IMETs, who may be deployed to a fire location. These specially trained fire weather forecasters (more than 70 certified nationwide) can be sent to remote locations throughout the United States to support wildfire operations. IMETs provide weather information tailored to a specific fire. This on-site weather support helps ensure fire crew safety and provides tactical information to the fire management team. IMETs receive special training in microscale forecasting, fire behavior and fire operations, and are a key member of the fire management team.

Incident meteorologists utilize special mobile equipment to provide on-site weather forecasts for wildfire suppression and prescribed burning projects. This equipment is known as the All-hazards Meteorological Response System (AMRS) and gives the IMET a workstation similar to that used at a National Weather Service forecast office. In very remote locations, the AMRS can also use satellite technology to allow IMET access to almost all NOAA's National Weather Service weather information, including the latest surface and upper air observations, Doppler weather radar and weather satellite data.

NOAA satellites play a key role in fire weather forecasting, particularly in early detection of rapidly growing fires, especially in remote areas. And by manipulating and combining multiple satellite images in a 24-hour period, NOAA's National Weather Service can provide a single comprehensive image, showing all wildfires detected nationwide at a four-kilometer resolution. This data helps forecasters know where wildfires are located even in open country where there are no visible smoke plumes or people. ☹